

FAST & FLUID MANAGEMENT  
**HA200-400-600**  
ENGLISH



# EU DECLARATION OF CONFORMITY

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

declare that:

Automatic dispensers      model: Harbil

types: HA200, HA400 & HA600

are in compliance with the following directives:

**Machinery Directive 98/37/EC**

**Low Voltage Directive 73/23/EEC**

**Electromagnetic Compatibility Directive 89/336/EEC**

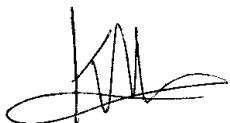
according to the following harmonized standards:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation

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## EU-KONFORMITÄTSERKLÄRUNG

Wir,

**Fast & Fluid Management, Niederlande**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, Niederlande

erklären dass:

Automatic dispensers      model: Harbil

types: HA200, HA400 & HA600

konform sind mit den einschlägigen Bestimmungen der EG-Maschinenrichtlinie:

**Maschinenrichtlinie 98/37/EG**

**Niederspannungsrichtlinie 73/23/EWG**

**EMV-Richtlinie EMC 89/336/EWG**

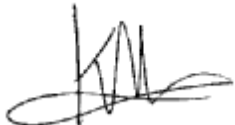
folgende harmonisierten Normen zur Anwendung gelangten:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, Niederlande  
A Unit of IDEX Corporation

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# EG CONFORMITEITSVERKLARING

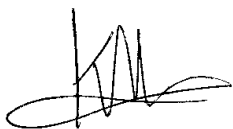
Wij,  
**Fast & Fluid Management, Nederland**  
A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, Nederland

verklaren dat:  
Automatic dispensers      model: Harbil      types: HA200, HA400 & HA600

in overeenstemming met de volgende richtlijnen:  
**Machinerichtlijn 98/37/EC**  
**Laagspanningsrichtlijn 73/23/EEC**  
**Richtlijn EMC 89/336/EEC**

voldoen aan de volgende geharmoniseerde Europese normen:  
**EN 292-1, EN 292-2, EN 418 & EN 1050**  
**EN 60204-1**  
**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**  
Vice President Manufacturing  
Fast & Fluid Management, Nederland  
A Unit of IDEX Corporation

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# DÉCLARATION CE DE CONFORMITÉ

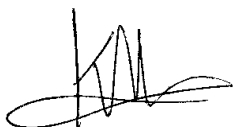
Nous,  
**Fast & Fluid Management, Pays-Bas**  
A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, Pays-Bas

déclarons que:  
Automatic dispensers      model: Harbil      types: HA200, HA400 & HA600

sont en conformité avec la Directive pour les machines:  
**Directive machines 98/37/CEE**  
**Directive basse tension 73/23/CEE**  
**Compatibilité électromagnétique 89/336/CEE**

sont en conformité avec les normes Européennes harmonisés:  
**EN 292-1, EN 292-2, EN 418 & EN 1050**  
**EN 60204-1**  
**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**  
Vice President Manufacturing  
Fast & Fluid Management, Pays-Bas  
A Unit of IDEX Corporation

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# DECLARACIÓN CE DE CONFORMIDAD

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

declara que:

Automatic dispensers      model: Harbil

types: HA200, HA400 & HA600

están en conformidad con la directiva para las máquinas:

**La directiva para las máquinas 98/37/CEE**

**La directiva de baja tensión 73/23/CEE**

**Compatibilidad electromagnética 89/336/CEE**

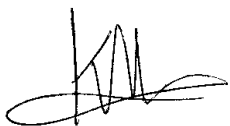
están en conformidad con las Normas Europeas armonizadas:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation



# DICHIARAZIONE CE DI CONFORMITÀ

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

dichiariamo che:

Automatic dispensers      model: Harbil

types: HA200, HA400 & HA600

sono in conformità alla Direttiva-CE Macchine:

**Direttiva macchine 98/37/CEE**

**Bassa tensione 73/23/CEE**

**Compatibilità elettromagnetica 89/336/CEE**

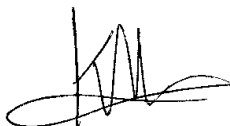
sono in conformità con Norme Europee di normalizzazione:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation



# DECLARAÇÃO CE CONFORMIDADE

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

declara que:

Automatic dispensers      model:   Harbil

types:    HA200, HA400 & HA600

está em conformidade com a Directiva Máquinas:

**Directiva para as máquinas 98/37/CE**

**Directiva baixa tensão 73/23/CE**

**Directiva EMC 89/336/CE**

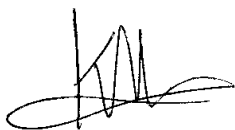
está em conformidade com as Normas Europeias:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation



# EF-OVERENSSTEMMELSESEKLÆRINGEN

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

Automatic dispensers      model:   Harbil

types:    HA200, HA400 & HA600

til hvilken denne erklæring er anvendt i overensstemmelse med EU's Maskindirektiv:

**98/37/EØF**

**73/23/EØF**

**EMC 89/336/EØF**

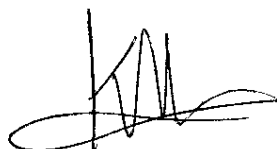
er i overensstemmelse med harmoniserede Europæiske Standarder :

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation



# EU DEKLARASJON AV OVERENSTEMMELSE

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

herved erklæres at:

Automatic dispensers

model: Harbil

types: HA200, HA400 & HA600

er in overenstemmelse med EU-Direktivet for maskiner:

**98/37/EEC**

**73/23/EEC**

**EMC89/336/EEC**

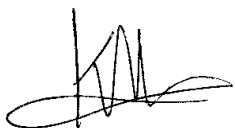
er in overenstemmelse med harmoniserte Europeiske Standarder:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation

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# EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

försäkrar härmed att :

Automatic dispensers

model: Harbil

types: HA200, HA400 & HA600

är tillverkade i överensstämmelse med EG Maskindirektiv:

**98/37/EEC**

**73/23/EEC**

**EMC 89/336/EEC**

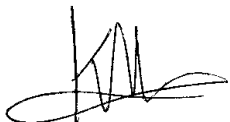
är tillverkade i överensstämmelse med Följande harmoniserande Standarder:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



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Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation

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# EY-VAATIMUSTENMAKAISUUSVAKTUUTUS

## Fast & Fluid Management, the Netherlands

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

vakutta että:

Automatic dispensers model: Harbil

types: HA200, HA400 & HA600

täyttää konedirektiivin:

**98/37/ETY**

**73/23/ETY**

**EMC 89/336/ETY**

ja siihen liittyvien muutosten sekä ne voimaansaattavien kansallisten säädösten määräykset

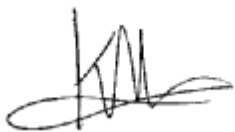
seuraavia yhdenmukaistettuja standardeja on sovellettu:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



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Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation

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## EBE SAMRÆMISYFIRLYSING

## Fast & Fluid Management, the Netherlands

A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands

Hér með er því lýst yfir að:

Automatic dispensers model: Harbil

types: HA200, HA400 & HA600

Er í samræmi við ákvæði tilskipunnar um vélar:

**98/37/EEC**

**73/23/EEC**

**EMC 89/336/EEC**

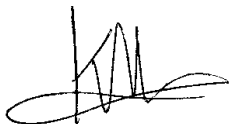
Eftirtaldir samræmisstaðlar hafa verið notaðir:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



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Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation

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# DEKLARACJA ZGODNOŚCI ZE STANDARTAMI UE

**Fast & Fluid Management, the Netherlands**

A Unit of IDEX Corporation

Hub van Doorneweg 31

2171 KZ Sassenheim, the Netherlands

deklaruje, że:

Automatyczne dozowniki:      model:    Harbil

typy:      HA200, HA400 & HA600

Spełniają wymogi poniższych dyrektyw:

**Dyrektywa dotycząca maszyn 98/37/EC**

**Dyrektywa dotycząca niskich napięć 73/23/EEC**

**Dyrektywa zgodności elektromagnetycznej 89/336/EEC**

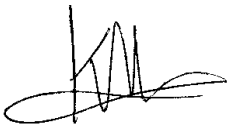
zgodnie z następującymi normami zharmonizowanymi:

**EN 292-1, EN 292-2, EN 418 & EN 1050**

**EN 60204-1**

**EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3**

Sassenheim, 04-08-2003



**ir. K. Meeusen**

Vice President Manufacturing

Fast & Fluid Management, the Netherlands

A Unit of IDEX Corporation

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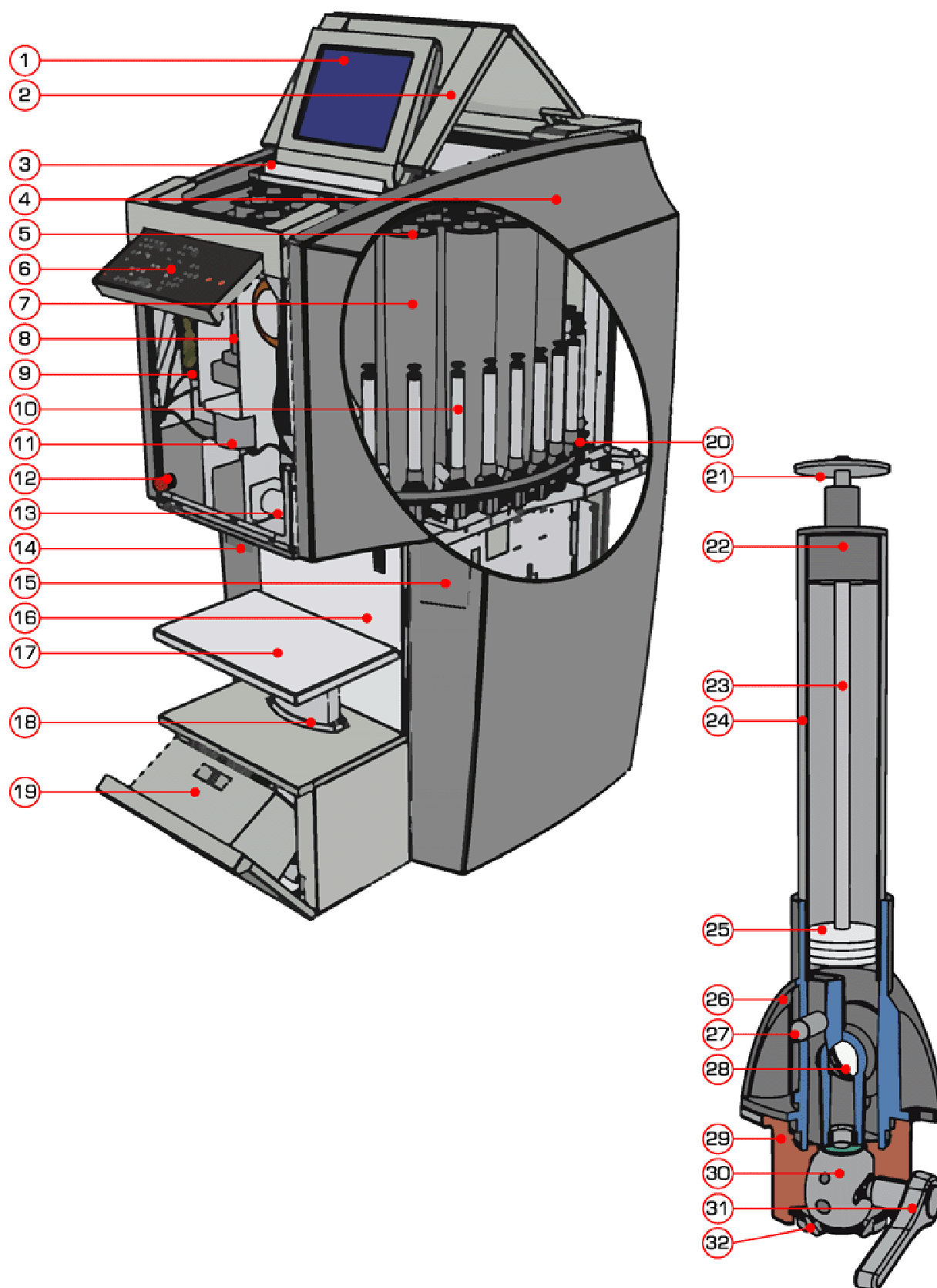
## A - Introduction

By selecting a Fast & Fluid Management Color Dispenser you have opted for a product which is the result of intensive research. Top-quality components, craftsmanship and a modern ergonomic design all serve to guarantee a long service life and a high degree of user friendliness. The machine complies with Council Directives 89/392/EEC on machines, 89/336/EEC on electromagnetic compatibility, and 73/32/EEC on electrical equipment intended for use within given voltage limits, as enacted by the Council of Ministers of the European Community. The machine is furnished with a CE mark.

## B - Warranty conditions

In these warranty conditions, 'F&FM' is understood to mean Fast & Fluid Management. The warranty conditions incorporated into F&FM's general conditions of sale are summarized as follows (for free general conditions you can contact F&FM):

1. F&FM guarantees the proper operation of any goods which it supplies, for a period of one year, except where a breakdown is the result of normal wear and tear. The cost of any inspection activities carried out by F&FM, with the aim of establishing whether or not a breakdown is covered by the warranty will be reimbursed by the other party if it transpires that the breakdown is not covered by the warranty. If it transpires that a breakdown is covered by the warranty then F&FM will supply identical or equivalent goods under the conditions referred to in point 6 of the general conditions of sale. The warranty obligation described in this article only applies if the goods supplied by F&FM have been used in accordance with the manual. Time spent on warranty-related activities, including travel time, travel costs and accommodation costs, are charged at current rates.
2. In contrast to the above, F&FM will not be held to any warranty obligation if:
  - a) Repairs have been carried out, or attempted, by the other party or a third party, unless F&FM had previously declined to repair the goods for a fair price;
  - b) F&FM demonstrates that the defect did not emerge during testing;
  - c) The other party fails to inform F&FM of the defect immediately, if possible either by letter and/or by fax, providing full, accurate details and/or has failed to comply fully with F&FM's instructions;
  - d) The other party has failed to use or treat the goods properly or in accordance with F&FM's instructions;
  - e) The damage has been caused by incidents, beyond F&FM's supervision, which have occurred either during transport or installation.
3. In the following text, the expression "Software" will be understood to mean the standard computer software supplied by F&FM to the other party, recorded on a computer-readable storage medium, plus the accompanying documentation (Software Manual) and including any improved and/or new versions supplied. The expression "processing unit" (PU) is understood to mean the machine for which and with which the Software is supplied, and which is the sole machine on which the Software may be used.
4. The other party is authorized to copy the Software either in its entirety, or in part, (up to a maximum of 2 copies) for purposes of internal security. These copies will be furnished with the same marks, designations relating to copyright and other registration numbers as the original version of the Software.
5. The other party will neither amend, translate, decompile nor adapt the Software, nor convert it into source code, without express written permission from F&FM. If the other party so requests, F&FM will provide that party with the information required to render the Software interoperable with other software.
6. In the event that the PU experiences a breakdown, the other party may use the software on another processing unit until the PU is again operational. The other party will inform F&FM of this within 5 days.
7. If it is a requirement that the Software be definitively transferred from the PU to another processing unit then the other party shall request permission from F&FM, which will not withhold such permission on unreasonable grounds.



## C - Explanation of drawings

### Dispenser

- |     |  |
|-----|--|
| 1.  | TFT color display                      |
| 2.  | Folding top lid                        |
| 3.  | Top lid push bar                       |
| 4.  | Side panel                             |
| 5.  | Canister lid                           |
| 6.  | Keyboard & touch pad, can table switch |
| 7.  | Canister                               |
| 8.  | Pump gripper spindle                   |
| 9.  | Electronics power board                |
| 10. | Pump assembly (details below)          |
| 11. | Spindle stepper motor                  |
| 12. | Emergency stop                         |
| 13. | Valve gripper actuator                 |
| 14. | Brush tray access door                 |
| 15. | Optional access door                   |
| 16. | Lower Service panel & computer access  |
| 17. | Can table                              |
| 18. | Can table actuator                     |
| 19. | Step (for easy canister access)        |
| 20. | Canister turntable                     |

### Pump assembly

- |     |                    |
|-----|--------------------|
| 21. | Disc grip          |
| 22. | Pump cap           |
| 23. | Piston rod         |
| 24. | Pump tube          |
| 25. | Piston             |
| 26. | Valve body         |
| 27. | Pin sensor         |
| 28. | Canister mount     |
| 29. | Ball valve housing |
| 30. | Ball valve         |
| 31. | Ball valve arm     |
| 32. | Insert             |





### A - General safety instructions



Attention! Before installing the equipment and setting it in operation, please read the instructions for use carefully. This is safer for yourself and prevents unnecessary damage to the machine.

The manufacturer accepts no liability if the instructions below are not followed:

1. If a machine has been damaged (during transport, for example), do not attempt to set it in operation. When in doubt, first contact either your supplier or the F&FM service department.
2. The equipment should be positioned and connected up in strict accordance with the installation instructions.
3. All local safety regulations and ordinances should be observed.
4. The machine may be connected only to a 230V/16A/50Hz or 100-110V/25A/50-60HZ earthed wall socket installed in accordance with the regulations.
5. Users should see to it that the machine is kept in good condition. Defective components should be replaced.
6. In order to prevent physical injury, the doors should be closed and the paneling fitted during normal use.
7. All service activities (other than routine maintenance and adjustments) may only be carried out by qualified technicians. See to it that the mains lead is always kept unplugged while repairs are being carried out.
8. Because of the design of the valve, a nozzle drill may never be used. Cleaning is done by running the cleaning program.

### B - Specific warnings in this manual



Attention! Switching off the dispenser with the emergency stop will also stop colorant agitation.



Attention! The punch knife is very sharp! Do not hold can while punching.

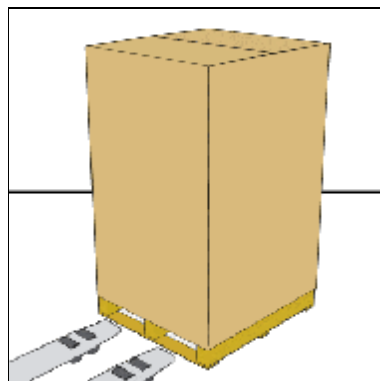


Attention! MOVING PARTS CAN CAUSE INJURY. Always turn off power (e.g. by pressing emergency stop) before accessing moving parts.

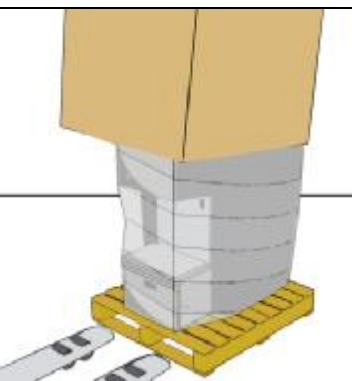


## A - Installing the dispenser

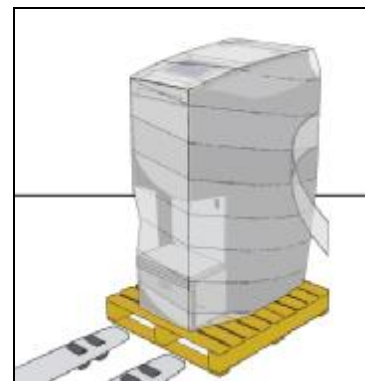
### Step 1 Unpack the machine



Place the skid near the place of installation.



Remove the cardboard box.

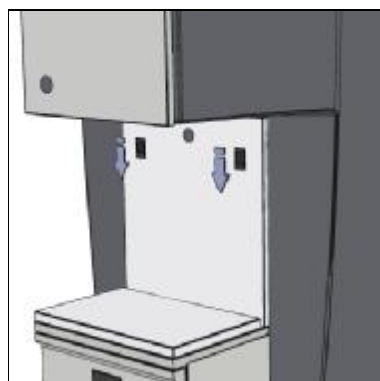


Remove the plastic foil around the machine.

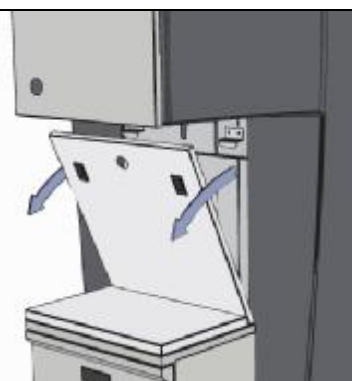


Be careful not to damage the body and surfaces of your Harbil with any tools while unpacking it.

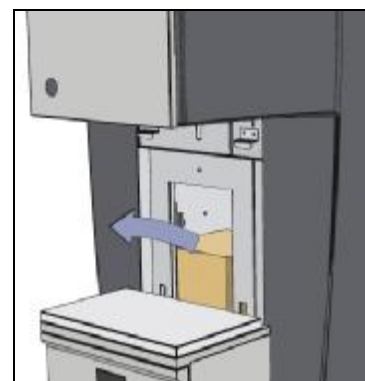
### Step 2 Remove loose components



Unlock the service and back panel by pushing the two black handles down simultaneously.

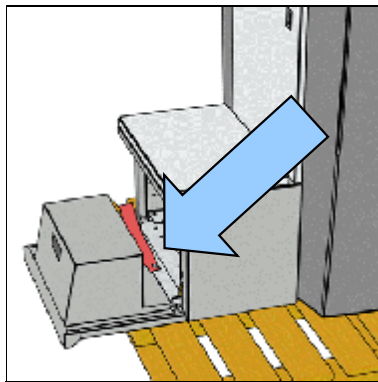


Remove the panel by pulling it towards you and subsequently lifting it.



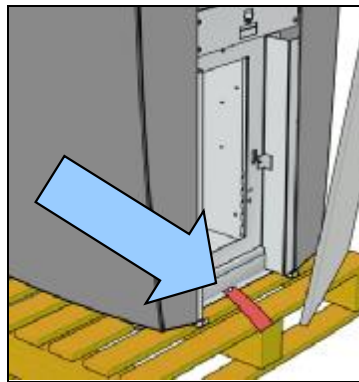
Remove all packages and loose components from within the machine.

## Step 3 Detach the dispenser from its transport skid



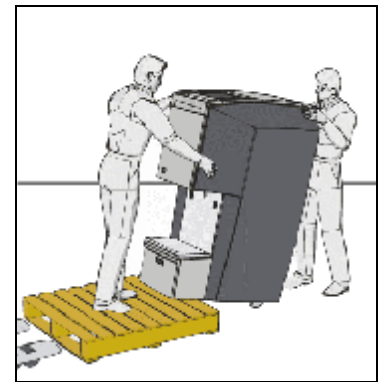
Unscrew the labeled bolt in the front of machine, under the can table.

>



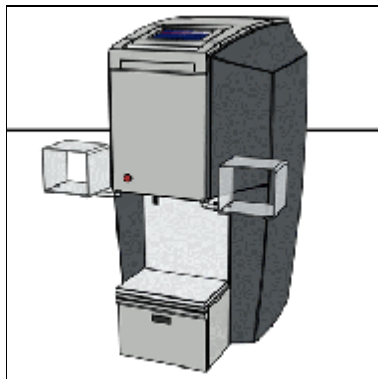
Unscrew labeled bolt in back of machine, in the computer cavity.

>



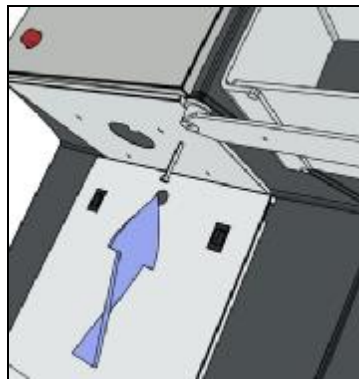
Carefully maneuver the machine off the skid onto its rear wheels and roll it to its final operational position.

## Step 4 Mount external hardware bracket (optional)



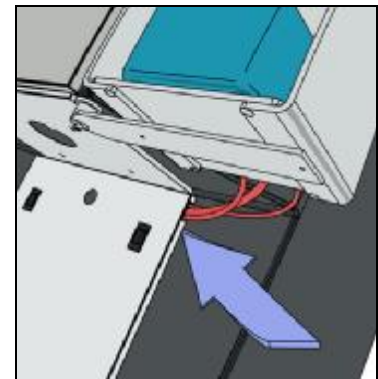
The bracket can be mounted on either side of the dispenser.

>



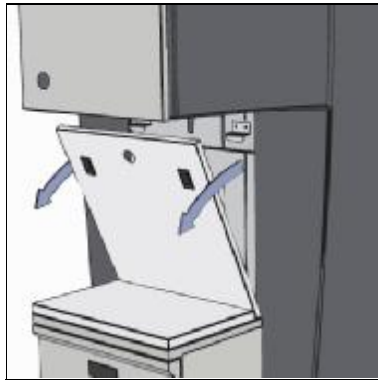
Mount bracket with supplied M6 bolt at desired angle.

>



Guide cables through slot in bottom service panel and connect to computer inside.

## Step 5 Mount manual punch (optional)



Remove bottom service panel. Four mounting nuts are now visible.



Mount manual punch with four supplied bolts.



Adjust M4 screws to center punch position under nozzle. Place new (slotted) bottom service panel.



Please ensure punching position of the manual punch is directly under dispensing nozzle. Adjust M4 screws if necessary.

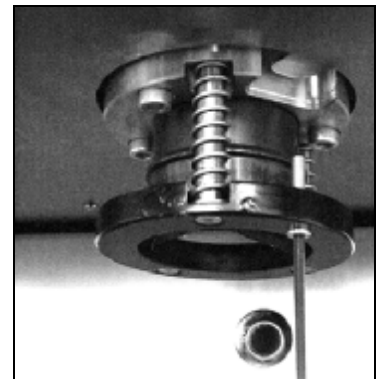
## Step 6 Mount electric punch (optional)



Three nuts for mounting the electric punch are located around the dispense nozzle.



Mount electric punch with three supplied M6 bolts. Take care in positioning the trigger bolt.



Carefully replace can detection plate and ensure trigger bolt is correctly positioned.



Please ensure the trigger bolt on the electric punch correctly triggers the can detection plate.

## B - Installing the computer and software

### Step 1 Place and connect computer to dispenser



Remove the back panel adjust tray height to suit computer model (for optimal accessibility of CD-ROM).



Place computer in cavity and fixate with supplied fastener.



Connect dispenser connector to COM1 (default) and mouse, keyboard and other appliances to designated computer ports.

### Step 2 Install dispenser software on computer



Install all necessary software provided by software supplier. Check software manual for details.



Use software to test basic functions of dispenser before filling. Check software manual for testing procedure.

## A - First time operation

### Step 1 Switching ON the dispenser & computer



&gt;

Unlock the emergency stop button on the front of the machine by turning clockwise. The machine is automatically switched on when the power connector at the back of the dispenser is plugged into a 220V or 100V-110V wall socket.

Please be aware that the Harbil series dispensers are fitted with sleeping timers as standard. This means that after approximately 30 minutes the dispenser will enter a power saving mode in which all secondary units (e.g. sensors) are switched off automatically. Stirring is not affected by this mode.

To awake the dispenser from its sleeping mode, perform any command from the dispensing software or press either of the can table buttons.

### Step 2 Switching OFF the dispenser & computer



&gt;

Please note that with normal operation there should be no reason to take the power off the dispenser. In case the dispenser must be switched off, there are several ways of achieving this:

- 1) Shut down the computer and unplug the power connector at the back of the machine.
- 2) Shut down the computer and switch the internal power socket behind the bottom service panel at the front of the machine.
- 3) Shut down the computer and press the emergency stop button.



Attention! Switching off the dispenser with the emergency stop will also stop colorant agitation.

### Step 3 Setting the stirring time



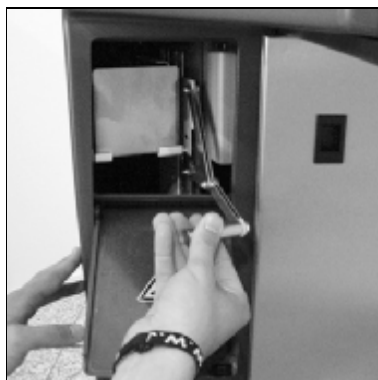
&gt;

The stirring time and interval can be altered from its default settings\*. This can be done through the dispenser software, check your software manual for instructions. Please ask your paint supplier for optimal agitation settings for your specific colorant products.

\* Default value is 180 seconds of agitation every 3 hours.



## Step 4 Fill the brush tray (nozzle cleaning system)



Remove the brush tray by opening the door and pulling down the lever supporting it.



Fill the container with water or an alternative liquid proposed by your paint supplier.



Replace the brush tray in its original position. Cleaning fluid must be refreshed daily!

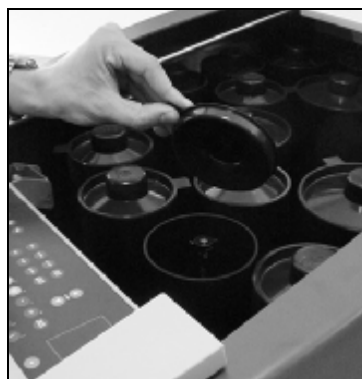


Use only cleaning fluids recommended by your paint supplier. Wrong materials can result in nozzle blockage and reduced accuracy.

## Step 5 Fill the canisters with colourant



Unfold the step and open the top lid by sliding it all the way back. Remove the canister lids.



Check your software manual for filling sequence.



Run software purge program twice to remove air from system.



## B - Dispensing

### Step 1 Bring can to correct position



Place the can at the center of the can table cross hair.



Move the can table upward by pressing the can table switch on the keyboard.



The upward movement will stop automatically. This is the optimal height for dispensing.

### Step 2 Punch hole in can lid - ELECTRIC (only if fitted with optional electric punch)

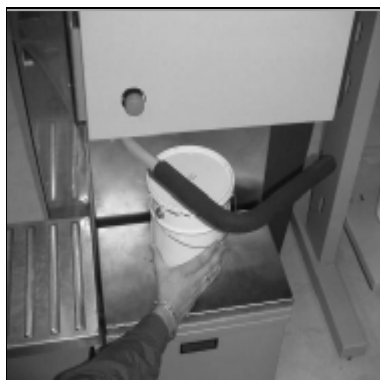


Attention! The punch knife is very sharp! Do not hold can while punching.



After punching the hole will be exactly under the dispensing nozzle. Please take care not to move the can before dispensing.

## Step 3 Punch hole in can lid - MANUAL (only if fitted with optional manual punch)



Attention! The punch knife is very sharp! Do not hold can while punching.

## Step 4 Dispense colorant into base material



Ensure can opening is under the dispenser nozzle and at its optimal height (automatic stop).

Choose desired formula as shown in software manual. The turntable will subsequently rotate to correct positions.

Lower can by pressing can table button on keyboard and remove can. Congratulations!



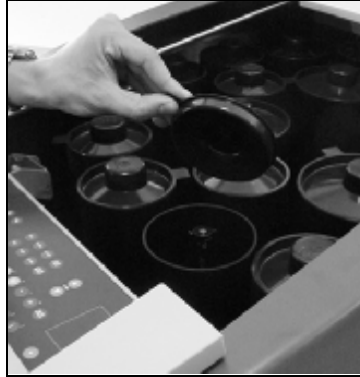
Dispensing is mainly a software issue. Please read your software manual thoroughly for all possible options.

## A - Daily maintenance

Clean the brush tray, refill canisters and run morning program



Remove the brush tray and empty the container. Clean the brush with water and refill the container with correct fluid (e.g. water).



Fill canisters if level is low and update levels in software. Stir colorant beforehand.



Start software morning program to purge valves and clean nozzles. Check your software manual for details.



Use only cleaning fluids recommended by your paint supplier. Wrong materials can result in nozzle blockage and reduced accuracy.

## B - Weekly maintenance

Remove spilt paint & colorant and refill canisters



Clean can table and outside parts with diluted detergent.



Check canister content and refill if necessary.



Always close canister and machine lid after refilling. Be aware the machine will not agitate if the top lid is not closed!

## C - Monthly maintenance



Remove back panel.



Clean dust from computer cavity and spilt colorant inside machine.



Check pump valve for possible malfunctions (e.g. leakage or blockage).



Attention! MOVING PARTS CAN CAUSE INJURY. Always turn off power (e.g. by pressing emergency stop) before accessing moving parts.

## D - Flat screen maintenance



Do not use any wetted materials, detergents, solvents, thinners or other cleaning agents to clean the TFT flat-screen monitor. Its surface is very delicate!

How to keep your Flatscreen clean:

- Wipe off water droplets or oil immediately. If you leave the droplets for a long time, staining and discoloration may occur.
- If the surface of the polarizer is dirty, clean it using some absorbent cotton or soft cloth. The desirable cleaners are water, IPA (isopropyl alcohol) or Hexane. Do not use ketone type materials (ex. Acentone), ethyl alcohol, toluene, ethyl acid or methyl chloride. It might permanent damage to the polarizer due to chemical reaction.
- Gently wipe the screen with a clean camel hair lens brush, or a soft, clean, lint-free cloth. This removes dust and other particles that can scratch the screen.
- Do not apply pressure to the screen surface when wiping it clean.
- Do not pour or spray any liquid directly onto the screen or case of the LCD monitor. Chemical cleaners have been reported to damage the screen or case of the LCD monitor.

## A - Introduction

Before calling your machine supplier or Service Department, please check whether you can solve the problem yourself. If you cannot, then call the Service Department for advice. Have the model number and serial number at hand (these can be found on the silver CE sticker at the behind the service panel at the front of the machine).

Use the Problem Solving chart below to judge whether you can solve a problem yourself or not. The tool symbol (⚠) means you cannot solve the problem yourself and the Service Department must be called.

On no occasion remove side panels yourself, this may only be done by trained service personnel. This chart does not include any of the malfunctions which are reported in an error message by the software.

In the event of a malfunction, these messages and possible solutions are displayed on the monitor.



**Attention! MOVING PARTS CAN CAUSE INJURY.** Always turn off power (e.g. by pressing emergency stop) before accessing moving parts.

## B - Problem solving

Symptom	Cause	Action
Valve leaks through the outlet opening	<ul style="list-style-type: none"> <li>&gt; Air bubble in pump</li> <li>&gt; Valve is defective</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Prime the pump</li> <li>&gt; Replace pump (⚠)</li> </ul>
Canister connection leaks around the suction point	<ul style="list-style-type: none"> <li>&gt; Worn O-ring(s)</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Replace O-ring(s) (⚠)</li> </ul>
Air is being fed together with the paste	<ul style="list-style-type: none"> <li>&gt; Air bubble in the pump</li> <li>&gt; Canister is empty</li> <li>&gt; Piston is defective</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Prime the pump</li> <li>&gt; Refill canister</li> <li>&gt; Replace pump (⚠)</li> </ul>
(New) software is not working	<ul style="list-style-type: none"> <li>&gt; Program not correctly booted</li> <li>&gt; Software incorrectly installed</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Reboot computer &amp; software</li> <li>&gt; Reinstall software</li> </ul>
No power from power unit	<ul style="list-style-type: none"> <li>&gt; Not connected to power grid</li> <li>&gt; Fuse blown</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Check power cables</li> <li>&gt; Remove plug from socket, replace fuse</li> </ul>
Colours are difficult to reproduce	<ul style="list-style-type: none"> <li>&gt; Mechanisms are dirty</li> <li>&gt; Quality fluctuations in paste supplied</li> <li>&gt; One or more pastes have thickened</li> <li>&gt; Turntable in wrong position</li> <li>&gt; Leaks around piston(s)</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Clean and oil</li> <li>&gt; Contact paste supplier</li> <li>&gt; Replace paste(s)</li> <li>&gt; Reset (press and unlock emergency stop button)</li> <li>&gt; Replace piston(s) (⚠)</li> </ul>
Poor monitor picture, or no picture	<ul style="list-style-type: none"> <li>&gt; Monitor is switched off</li> <li>&gt; Loose cable(s)</li> <li>&gt; Picture set too dark</li> <li>&gt; Monitor malfunctioning</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Switch monitor on</li> <li>&gt; Check cables</li> <li>&gt; Adjust picture correctly</li> <li>&gt; (⚠)</li> </ul>
Keyboard is not working	<ul style="list-style-type: none"> <li>&gt; Loose cable(s)</li> <li>&gt; Windows Regional setting is incorrect</li> <li>&gt; Defective cable(s)</li> <li>&gt; Keyboard is defective</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Check cables</li> <li>&gt; Check Windows software manual</li> <li>&gt; (⚠)</li> <li>&gt; (⚠)</li> </ul>
Stirrer is not rotating	<ul style="list-style-type: none"> <li>&gt; Top lid not closed properly</li> <li>&gt; Timer setting incorrect</li> <li>&gt; Loose cable</li> <li>&gt; Defective cable</li> <li>&gt; Defective motor</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Close top lid</li> <li>&gt; Use the software to set the timer correctly</li> <li>&gt; Check cable</li> <li>&gt; (⚠)</li> <li>&gt; (⚠)</li> </ul>
Turntable is not turning	<ul style="list-style-type: none"> <li>&gt; Top lid not closed properly</li> <li>&gt; Piston rod positioned too high</li> <li>&gt; Valve mouth pointing down</li> <li>&gt; Cable(s) loose</li> <li>&gt; Cable or motor defective</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Close top lid</li> <li>&gt; Set piston in lower position</li> <li>&gt; Reposition valve mouth</li> <li>&gt; Check cables</li> <li>&gt; (⚠)</li> </ul>

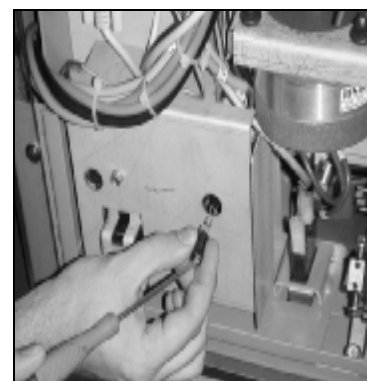
## C - Service Department

If necessary, you can get in touch with your supplier or the local service department, or contact the manufacturer directly. If you contact the manufacturer, make sure that you have the model number and serial number to hand. They can be found on the name plate on the machine.

Fast & Fluid Management  
P.O. Box 220  
2170 AE Sassenheim, the Netherlands  
Hub van Doorneweg 31  
2171 KZ Sassenheim, the Netherlands  
Tel: +31 (0)252 240 800  
Fax: +31 (0)252 240 882 (service)  
+31 (0)252 240 880 (general)

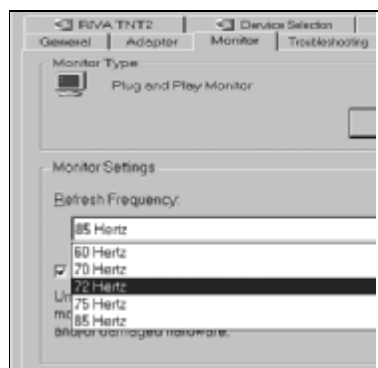
## D - Fuses

Replace fuses behind front panel.

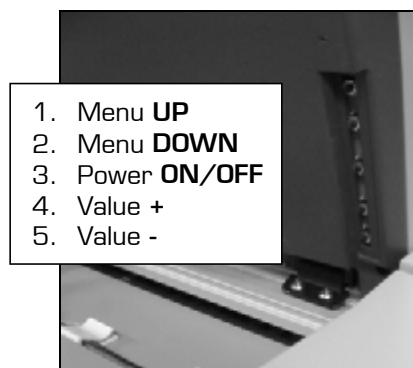


## E - Flat screen – adjust settings

Windows settings & use of buttons at rear of screen

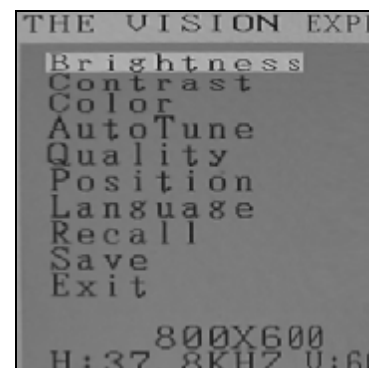


Ensure the (Windows) video refresh is between 60 and 85 Hz and 800x600 pixels.



1. Menu **UP**
2. Menu **DOWN**
3. Power **ON/OFF**
4. Value **+**
5. Value **-**

Use button 2 (Menu Down) to enter the onscreen menu.



Run the 'Autotune' function and 'Position - Center'. Please save upon exiting.







